

CLAIMS

What is claimed is:

1. An apparatus comprising:

5 a skin of a computing device, said skin comprising a conductive material; and
 a slot in the skin, said slot comprising a slot antenna.

2. The apparatus of claim 1 wherein the conductive material comprises an outer
layer of the skin in at least of vicinity of the slot.

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3. The apparatus of claim 2 wherein the outer layer comprises one of a conductive
coating and a conductive mesh.

4. The apparatus of claim 2 wherein the slot extends through only the outer layer.

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5. The apparatus of claim 2 wherein the slot extends through both the skin and the
conductive layer.

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6. The apparatus of claim 1 wherein the skin is made entirely of the conductive
material.

7. The apparatus of claim 1 wherein the computing device comprises one of a
notebook computer, a tablet computer, and a handheld computer.

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8. The apparatus of claim 1 wherein the computing device comprises at least one of
a base and a lid, and wherein the slot is located in at least one of an edge of the
base, an edge of the lid, an outside of the lid, an inside of the lid, through the lid,
and through the base.

9. The apparatus of claim 1 further comprising:

a cavity behind the slot, said cavity having a depth of approximately one-quarter of a wavelength of a resonant frequency of the slot antenna.

5 10. The apparatus of claim 1 further comprising:

an impedance plane coupled to the skin under the slot.

11. The apparatus of claim 10 wherein the impedance plane comprises an Artificial Magnetic Conductor (AMC).

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12. The apparatus of claim 10 wherein the impedance plane comprises a multiple band impedance plane, said multiple band impedance plane to act as a magnetic conductor for a primary resonant frequency and a secondary resonant frequency of the slot.

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13. The apparatus of claim 1 wherein the slot antenna has a primary resonant frequency and a secondary resonant frequency.

20 14. The apparatus of claim 13 wherein the primary resonant frequency and the secondary resonant frequency are tuned for two different wireless communications standards.

15. The apparatus of claim 14 wherein the two wireless communications standards comprise at least one of Bluetooth, 802.11a, 802.11b, and 802.11g.

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16. The apparatus of claim 1 wherein at least one of a thickness of the skin in a vicinity of the slot, a width of the slot, a length of the slot, and a tuning element at a feed point of the slot are tuned to achieve at least one of a target impedance and a primary resonant frequency of the slot.

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17. The apparatus of claim 1 wherein the slot antenna comprises a sector slot antenna having a directional radiation pattern.
18. The apparatus of claim 17 wherein the sector slot antenna comprises a first sector slot antenna in a sector antenna system, said sector antenna system further comprising:
- a second sector slot antenna in the skin, said second sector slot antenna having a directional radiation pattern in a different direction than the first sector slot antenna.
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19. The apparatus of claim 17 wherein the sector slot antenna comprises a first sector slot antenna in a sector antenna system, the apparatus further comprising:
- a plurality of additional sector slot antennas in the skin, each of the plurality of additional sector slot antennas having a directional radiation pattern covering a different sector surrounding the computing device.
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20. The apparatus of claim 17 wherein the sector slot antenna has the directional radiation pattern for multiple resonant frequency bands.
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21. The apparatus of claim 1 further comprising:
- a tuning element coupled to the slot, said tuning element to tune a secondary frequency for the slot antenna.
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22. The apparatus of claim 21 wherein the tuning element comprises a stub capacitor.
23. The apparatus of claim 1 wherein the slot antenna comprises a first slot antenna, the apparatus further comprising:
- a second slot antenna in the skin, said first slot antenna and said second slot antenna comprising a diversity antenna.
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24. A system comprising:
- a notebook computer;
 - a skin covering at least a portion of the notebook computer, said skin
- 5 comprising a conductive material; and
- a slot in the skin, said slot comprising a slot antenna.
25. The system of claim 24 further comprising:
- a cavity behind the slot, said cavity having a depth of approximately one-quarter of a wavelength of a resonant frequency of the slot antenna.
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26. The system of claim 24 further comprising:
- an impedance plane coupled to the skin under the slot.
- 15 27. The system of claim 26 wherein the impedance plane comprises an Artificial Magnetic Conductor (AMC).
28. The system of claim 24 wherein the slot antenna comprises a sector slot antenna having a directional radiation pattern.
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29. The system of claim 28 wherein the sector slot antenna comprises a first sector slot antenna in a sector antenna system, said sector antenna system further comprising:
- a second sector slot antenna in the skin, said second sector slot antenna
- 25 having a directional radiation pattern in a different direction than the first sector slot antenna.
30. The system of claim 28 wherein the sector slot antenna comprises a first sector slot antenna in a sector antenna system, the apparatus further comprising:

a plurality of additional sector slot antennas in the skin, each of the plurality of additional sector slot antennas having a directional radiation pattern covering a different sector surrounding the notebook computer.

5 31. The system of claim 24 wherein the slot antenna comprises a first slot antenna,
the apparatus further comprising:

a second slot antenna in the skin, said first slot antenna and said second slot antenna comprising a diversity antenna.

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32. An apparatus comprising:

a skin of a computing device, said skin comprising a conductive material;
a first slot in the skin, said first slot comprising a first sector slot antenna
having a radiation pattern in a first direction;

15 a second slot in the skin, said second slot comprising a second sector slot antenna having a radiation pattern in a second direction;

a third slot in the skin, said third slot comprising a third sector slot antenna
having a radiation pattern in a third direction; and

20 a fourth slot in the skin, said fourth slot comprising a fourth sector slot antenna having a radiation pattern in a fourth direction.

33. The apparatus of claim 32 wherein the first, second, third, and fourth sector slot antennas have a primary resonant frequency and a secondary resonant frequency tuned for two different wireless communications standards.

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